CASE REPORT

Fitz-Hugh-Curtis syndrome lacking typical characteristics of pelvic inflammatory disease

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Accepted 10 June 2016

SUMMARY

A 23-year-old Japanese woman, previously a commercial sex worker, presented with a 2-day history of right upper quadrant (RUQ) abdominal pain, worse on deep inspiration. She had noticed increased vaginal discharge 2 months earlier and had developed dull, lower abdominal pain 3 weeks prior to presentation. Although pelvic examination and transvaginal ultrasonography revealed neither a tubal nor ovarian pathology, abdominal CT scan with contrast demonstrated early enhancement of the hepatic capsule, a finding pathognomonic for Fitz-Hugh-Curtis syndrome (FHCS). Cervical discharge PCR assay confirmed *Chlamydia trachomatis* infection. This case highlights that normal gynaecological evaluation may be insufficient to rule out FHCS, for which physicians should have a high index of suspicion when seeing any woman of reproductive age with RUQ pain.

BACKGROUND

Fitz-Hugh-Curtis syndrome (FHCS) is an acute perihepatitis caused by *Chlamydia trachomatis* or *Neisseria gonorrhoea*, and thought to represent ascending infection from pelvic inflammatory disease (PID).¹ FHCS poses a diagnostic challenge when presenting with isolated right upper quadrant (RUQ) abdominal pain, and without signs and symptoms of PID, as the symptoms of primary pelvic inflammation are either subtle or have resolved by the time of presentation. Primary care physicians should be familiar with this presentation since missed diagnoses can lead to infertility from recurrent pelvic inflammation.

CASE PRESENTATION

A 23-year-old Japanese woman presented with RUQ abdominal pain. She had, 2 months earlier, noticed increasing vaginal discharge. Three weeks prior, she had developed lower abdominal pain, which gradually migrated to the right side of her abdomen. One day before presentation, she developed intermittent, sharp RUQ abdominal pain, worse on deep inspiration and with movement. She denied fever, dysuria, urinary frequency, dysmenorrhoea, vaginal bleeding, vaginal itching or dyspareunia.

She was previously healthy and denied a history of sexually transmitted infections. She took no regular medications except for acetaminophen as needed for the abdominal pain. Her last menstrual period had been 3 weeks earlier and her menstrual cycle was regular. She had engaged in commercial sex work until 3 months earlier. Her last sexual

contact was 2 months before presentation. She admitted to inconsistent use of condoms.

On physical examination, the patient was afebrile with normal vital signs. There was tenderness over the RUQ, a positive Murphy's sign, as well as right costovertebral angle tenderness. There was no abnormal vaginal discharge, no cervical motion pain and no adnexal tenderness.

INVESTIGATIONS

Complete blood count and liver function tests were within normal limits. PID and FHCS were suspected based on the patient's clinical course and sexual history, but transvaginal ultrasonography revealed neither tubal nor ovarian pathology. Subsequent contrast-enhanced abdominal CT imaging revealed ileocaecal oedema and early enhancement of the hepatic capsule, the pathognomonic finding of FHCS (figure 1).² Cervical discharge PCR assay was found to be positive for *C. trachomatis* and negative for *N. gonorrhoea*. Screening tests for other sexually transmitted infections, including HIV, hepatitis B virus and syphilis, were negative.

DIFFERENTIAL DIAGNOSIS

The typical differential diagnoses of RUQ pain include cholelithiasis, acute cholecystitis, acute hepatitis, acute pyelonephritis, pneumonia and even an atypical presentation of appendicitis. Despite lack of gynaecological complaints, FHCS should also be considered in sexually active female patients.

TREATMENT

We empirically started ceftriaxone (1 g intravenously every 24 hours) and doxycycline (100 mg per oral 2 times daily), continuing ceftriaxone for 5 days, and completed a 14-day course of doxycycline after confirming *C. trachomatis* as the causative pathogen.

OUTCOME AND FOLLOW-UP

The patient responded well to a 14-day course of doxycycline, and had no sign of recurrence at 1 month follow-up. Repeat PCR assay for *C. trachomatis* was negative. Safe sex education was provided, and we recommended that her sexual partners also receive concurrent treatment.

DISCUSSION

FHCS occurs in 4–27% of patients with PID.¹ A classic case involves a sexually active young woman who presents with sudden to acute RUQ

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To cite: Mitaka H, Kitazono H, Deshpande GA, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-215711

Figure 1 Biphase contrast-enhanced abdominal CT revealed early enhancement of the liver capsule in the arterial phase.

abdominal pain that is pleuritic in nature, and antecedent symptoms of pelvic inflammation including lower abdominal pain, increasing vaginal discharge, vaginal itching and dyspareunia. Once suspected, abdominal CT with contrast enhancement is usually employed for clinical diagnosis of FHCS. Early enhancement of the hepatic capsule with contrast is considered pathognomonic,² although the actual sensitivity and specificity of this finding remains unclear, given that a diagnostic gold standard for FHCS has not been established. Compared with portal phase CT alone, biphase contrast-enhanced CT scan is recommended due to its higher diagnostic value.³ Laboratory data usually reveal normal liver function tests in patients with FHCS, distinguishing it from acute hepatitis.⁴ Abdominal ultrasonography, used to rule out biliary disease, is typically unremarkable in FHCS.¹ Although laparoscopy has been suggested for definitive diagnosis of FHCS in the past, with the far less invasive multislice contrast-enhanced CT now widely available, it has become less frequently used, especially in emergency settings.⁵

Although FHCS is always associated with PID, it may present without signs and symptoms of pelvic inflammation; RUQ and lower abdominal pain coexist in only 32% of patients with FHCS, with RUQ pain the only presenting symptom in 50% of cases.⁶ Moreover, clinicians should be aware that lower abdominal pain itself may be absent at presentation in more than half of the patients; in a small case series from Japan, Suzuki *et al*⁷ reported pain migrating away from the lower abdomen to the RUQ in eight of nine patients with FHCS. Vaginal discharge, and cervical motion and adnexal tenderness, which suggest antecedent PID, may be absent on presentation in many patients.

In our case, based on the patient's history of lower abdominal pain and increased vaginal discharge, the PID very likely

preceded the perihepatitis. However, pelvic examination, transvaginal ultrasonography and contrast-enhanced CT did not reveal any findings suggestive of adnexal or cervical inflammation. Because of the time frame required for inflammation to spread to the RUQ, the pelvic symptoms may have resolved by the time of presentation. Clinicians should not rule out FHCS based only on a normal gynaecological evaluation at presentation. Instead, we should focus on uncovering a pattern suggesting pain ascending from the lower abdomen to the RUQ, and a high-risk sexual history to uncover occult PID.

Learning points

- Clinicians should have a high index of suspicion for Fitz-Hugh-Curtis syndrome in women of reproductive age with right upper quadrant (RUQ) pain.
- Absence of lower abdominal pain and normal gynaecological evaluation with pelvic examination and transvaginal ultrasonography do not rule out Fitz-Hugh-Curtis syndrome.
- The keys to diagnosis are identifying a pattern of ascending pain to the RUQ, a high-risk sexual history and confirmation with biphase contrast-enhanced abdominal CT scan.

Contributors All the authors contributed to the discussion of this case and to writing manuscript. GAD contributed to checking the language used, as a native English speaker.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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